

Name: Answer Key

Honors Geometry 3.5-3.6 Review

Write a two column proof.

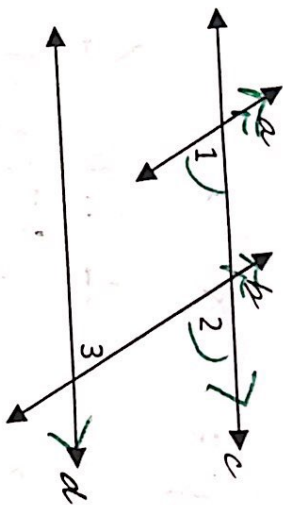
1. (4pts) Prove using a 2-column.

Given: $a \parallel b$, $\angle 1 \cong \angle 3$

Prove: $c \parallel d$

statements

reasons



① $a \parallel b$, $\angle 1 \cong \angle 3$
diagram

① Given

② $\angle 1$ and $\angle 2$ are corresponding \angle 's
 $\angle 2$ and $\angle 3$ are alt. int \angle 's

② Assumed by diagram

③ $\angle 1 \cong \angle 2$

③ IF lines are \parallel , then corresponding angles are \cong .

④ $\angle 2 \cong \angle 3$

④ Substitution POC

⑤ $c \parallel d$

⑤ IF alt. interior \angle 's are \cong , then the lines are \parallel .

2. Graph line m whose equation is $-6x - 3y = 9$. Construct a perpendicular line through $P(3, 1)$. Then find the distance from P to m .

① Equations

Given line

$$Y = -2x - 3$$

Perpendicular

$$m = 1/2$$

$$(3, 1)$$

$$\begin{array}{l} 70x \quad 70x \\ \hline -3y = 10x + 9 \\ -3 \quad -3 \\ \hline \end{array}$$

$$Y = -\frac{10}{3}x + 3$$

② Intersection

$$-2x - 3 = 1/2x - 1/2$$

$$-1/2x + 3 = 1/2x + 3$$

$$-2.5x = 2.5$$

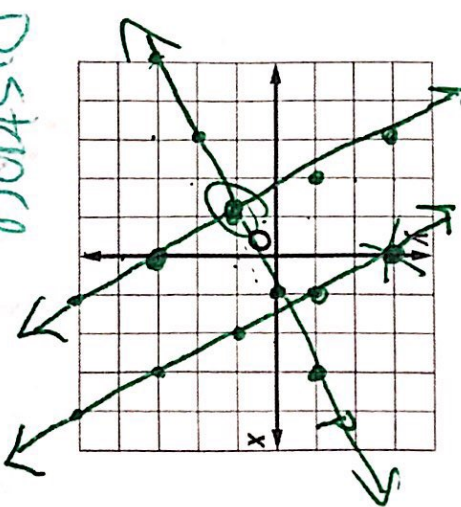
$$x = -1$$

$$(3, 1)$$

$$Y = -2(-1) - 3$$

$$2 - 3$$

$$Y = -1$$



③ Distance

$(-1, -1)$ and $(3, 1)$

$$d = \sqrt{(3+1)^2 + (1+1)^2}$$

$$\sqrt{16 + 4}$$

$$\sqrt{20}$$

$$d = 2\sqrt{5} \approx 4.47$$

Parallel lines ca

* Round to nearest hundredth

• $l_1 \quad Y = 2x + 3$

$l_2 \quad Y = \cancel{2x - 1}$

Given line \perp line $(0, -1)$ *

$Y = 2x + 3 \quad Y = -\frac{1}{2}x - 1$

Equations

Intersection

$\begin{cases} Y = 2x + 3 \\ Y = -\frac{1}{2}x - 1 \end{cases}$

$2x + 3 = -\frac{1}{2}x - 1$

$\frac{2}{5} \cdot \frac{5}{2}x = -4 \cdot \frac{2}{5}$

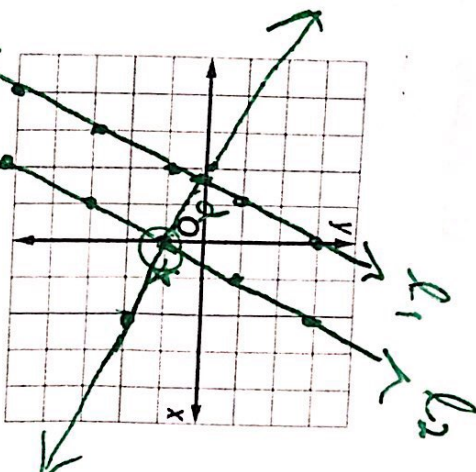
$x = \frac{-8}{5}$

$Y = 2\left(\frac{-8}{5}\right) + 3$

$Y = \frac{-16}{5} + \frac{15}{5}$

$Y = -\frac{1}{5}$

$\left(\frac{-8}{5}, -\frac{1}{5}\right)$



Distance

$(0, -1) \quad \left(\frac{-8}{5}, -\frac{1}{5}\right)$

$d = \sqrt{\left(0 + \frac{8}{5}\right)^2 + \left(-1 + \frac{1}{5}\right)^2}$

$d = \sqrt{\left(\frac{8}{5}\right)^2 + \left(-\frac{4}{5}\right)^2}$

$d = \sqrt{\frac{64}{25} + \frac{16}{25}}$

$d = \sqrt{3.2} \approx 1.79$